



Cervical Cancer in North Carolina

A Handbook
for Health Care Providers

The North Carolina Comprehensive Breast and Cervical Cancer Control Coalition

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The North Carolina Comprehensive Breast and Cervical Cancer Control Coalition

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CHAPTER

1

Cervical Cancer in North Carolina

North Carolina ranks ninth in the nation for cervical cancer deaths, fourth highest in the nation for African American women, and twelfth highest for white women. In addition, a disproportionate number of older women in North Carolina die from cervical cancer. This does not have to be the case. The means of detecting and treating cervical cancer are available.

What is Cervical Cancer?

Cervical cancer (*cervical carcinoma*) is an uncontrolled growth of abnormal cells on the cervix. Epidemiological studies have estimated that these changes progress over a 5 to 8 year period from dysplasia to carcinoma in situ to more advanced cervical intraepithelial neoplasia (CIN).

Cervical Cancer is Preventable and Curable

If Pap smears are done routinely and accurately, and if appropriate follow up is provided, death from cervical cancer can be prevented. The key is to make diagnosis early — when dysplasia and in situ cancer are nearly 100% curable. Generally, it takes 5 to 10 years for a woman to progress

from mild dysplasia to invasive cervical cancer. There is, however, a small number of women who progress to invasive cancer in approximately 3 years.

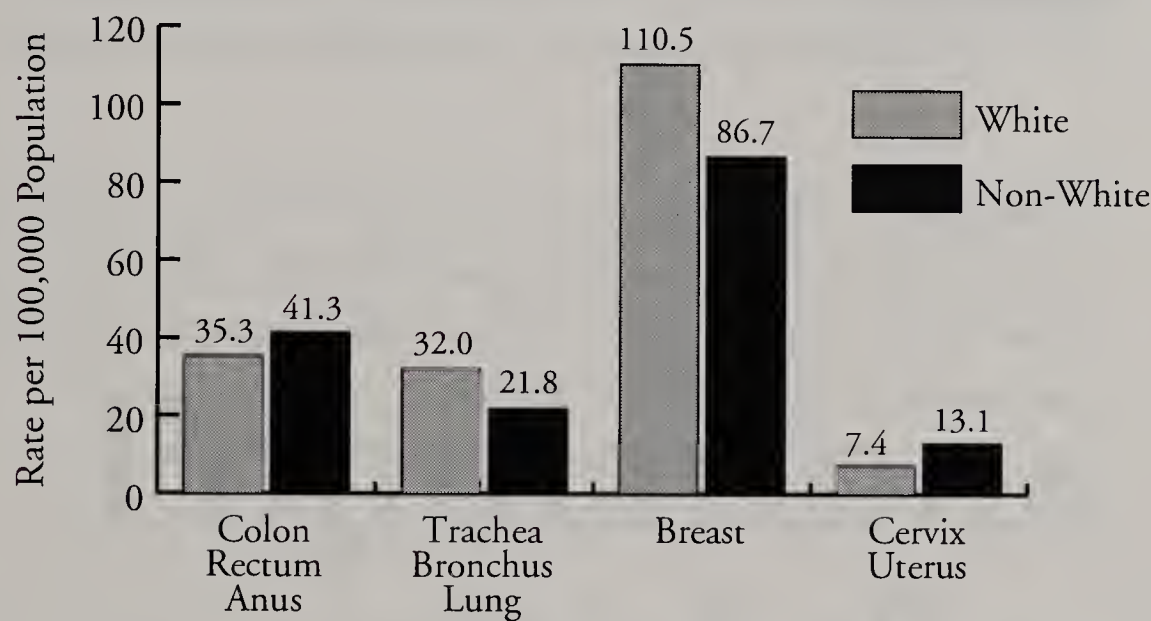
Cervical Cancer Fast Facts

- With early detection, most cervical cancer deaths are preventable.
- Approximately 138 women in North Carolina died of cervical cancer in 1993.

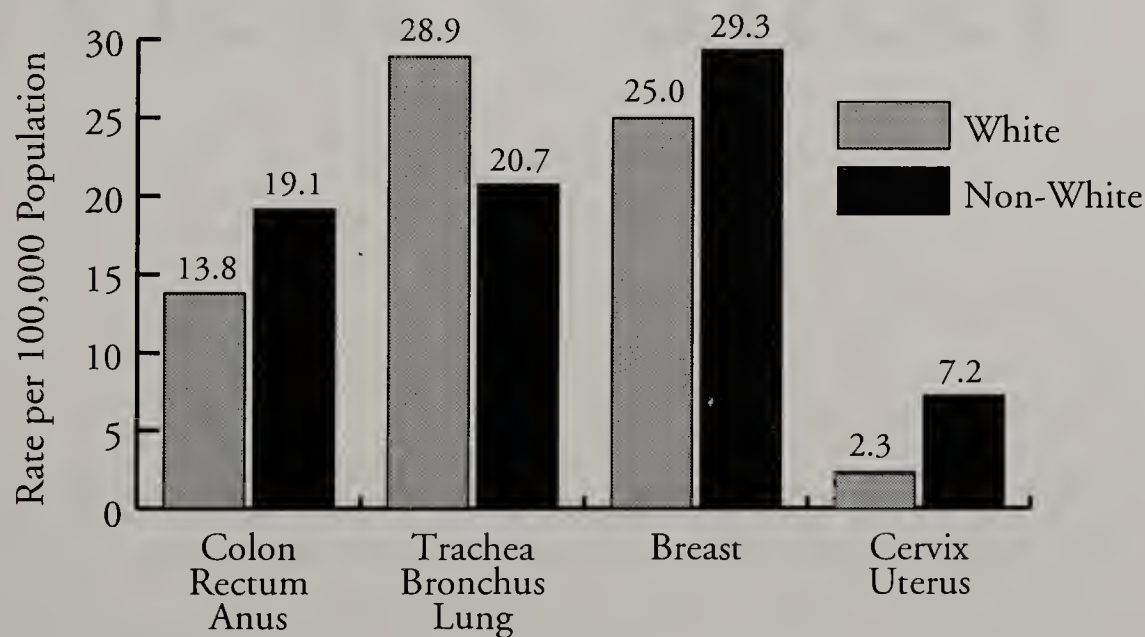
North Carolina's Cervical Cancer Problem

This handbook reflects concern about continued mortality from cervical cancer in North Carolina. It offers recommendations for attacking cervical cancer and preventing, if not completely eradicating, the disease.

Incidence of Cervical Cancer in North Carolina Compared to Other Leading Cancers in Women, 1991



Mortality in North Carolina Compared to Other Leading Cancers in Women, 1988-1992



Source: North Carolina Central Cancer Registry.

Incidence There were a projected 410 new diagnoses of invasive cervical cancer in 1994. By contrast, there were a projected 1,650 in situ cases diagnosed. The majority of the in situ cases were in African American women under age 40, while many invasive cases were among white women over age 65. Incidence is increased in women who are HIV positive.

Mortality Older women are more likely to die from cervical cancer than are younger women. There were approximately 150 cervical cancer deaths in 1994. The vast majority (86%) of these deaths were of women over age 40. The mortality rate is highest in the eastern part of the state and lowest in the south central and western areas. These regional variations partly reflect differences in availability and timeliness of screening and care, particularly for women in the higher risk categories.

Survival The 5 year survival rate for all women with invasive cervical cancer is 66%. For those diagnosed when the cancer is at a localized stage, however, the survival rate is 90%. If the disease is diagnosed in situ, the 5 year survival rate is almost 100%.

CHAPTER

2

Populations at Risk for Cervical Cancer

Populations at Risk for Cervical Cancer

All women 18 years old or above and women of any age who have been sexually active are at risk for cervical cancer. Research studies have identified additional factors that increase the probability of developing the disease. Social and economic characteristics have been identified that are related to under-utilization of screening services.

Risk Factors

Women at Greatest Risk for Developing Cervical Dysplasia

Although the exact causes of cervical dysplasia are not fully understood, all women with a cervix are at some risk. There are, however, factors that elevate the risk. These include:

- **Women exposed to Human Papilloma Virus (HPV).** Certain HPV subtypes are more commonly associated with dysplasia.
- **Women who had intercourse at an early age.** The younger the age at initiation of intercourse, the greater the risk of cervical dysplasia.
- **Women with multiple sexual partners.** The more sexual partners a woman has, the greater the likelihood that she will develop cervical dysplasia. Also, the more sexual partners a woman's partner has, the greater her risk.
- **Women with compromised immune systems.** The overall strength of the immune system appears to play a role in susceptibility to cervical dysplasia. Recent reports have suggested that the prevalence of cervical dysplasia is increased in Human Immunodeficiency Virus (HIV) infected women. It is difficult, however, to distinguish the effect of HIV infection from the effect of increased HPV exposure.
- **Women of low socioeconomic status.** It is difficult to distinguish effects of socioeconomic status from sexual behavior and diet.
- **Women who smoke.** Studies suggest that smokers develop cancerous changes of the cervix more often than women who do not smoke.
- **Women with deficiencies of vitamins A and C, as well as women with a compromised immune status related to HIV.** Their risk is under investigation.

Health care providers are more likely to find the listed risk factors for cervical dysplasia in women age 50 and younger. The risk factors for cervical cancer are typically issues for women age 50 and older. These age groups should be considered as two distinct populations.

Women at Greatest Risk for Developing Cervical Cancer

- Women who get Pap smears infrequently or not at all.
- Women who do not receive adequate and appropriate follow up of abnormal Pap smears.
- Women who are past child bearing age. They are most at risk for developing invasive cervical cancer.
- Women 50 years and older. They have more than three times the risk of women under 50.
- Women of color. They have 2.5 times the risk for developing cervical cancer as white women.

Women at Greatest Risk for Dying from Cervical Cancer

- Women who have not been screened.
- Women who do not get appropriate follow up care.
- Low income women and women residing in rural counties. They represent a higher incidence of advanced disease.
- Women who are older. In 1987–1988, the mortality rate for women over age 50 was 6.4 times greater than for younger women.
- Women who are of African American descent. In 1987–1988, the mortality rate for African American women was 2.8 times greater than that for white women.

Who is at Risk for Cervical Cancer?

- Women 18 or over and women of any age who have been sexually active.
- The risk of developing cervical cancer increases with age, especially in women past their child bearing years.
- Women with less formal education — regardless of race — have a higher risk of dying from this disease than do women who are college graduates.
- African American women are roughly three times as likely to develop cervical cancer and more than twice as likely to die from it as are white women.
- Cervical cancer is the third most common cancer among Hispanics in the United States, compared to sixth among whites.

Addressing the Needs of Special Populations

Women of Color

Women of color comprise 24% of North Carolina's female population. African Americans represent the largest such population. There are sizable numbers of Native American, Hispanic, and Asian American women in North Carolina, as well.

Poverty and low literacy — two factors that pose barriers to early detection of cervical cancer and recognition of risk behaviors — are more common among women of color.

African Americans

African Americans comprise 93% of the population of people of color in North Carolina and are mainly concentrated in the eastern portion of the state. Prior to 1990, none of the cancer analyses distinguished African Americans from other people of color. Beginning with the 1990 census figures, this type of analysis has become possible. Therefore, traditionally understudied populations such as southern and rural African Americans are becoming a new focus for research in North Carolina.

Native Americans

In North Carolina, there are two primary tribes, the Lumbees and Cherokees. The U.S. Public Health Service operates a medical facility in Cherokee, North Carolina. Cancer incidence in North Carolina is reported with a designation of "American Indian" and with specific tribal indications. The number of cancers reported thus far is too small for meaningful interpretation. Yet, attention is focused on Native Americans because of suggestions of unusual cancer patterns from studies of reservation populations in western states.

Many situational and cultural characteristics combine to make adequate use of the health care system and adherence to prescribed screening and treatment difficult for many Native Americans. Limited knowledge of cancer prevalence and prevention, poverty, minimal and unpleasant experiences with the health care system, and communication problems all present challenges to Native Americans and to their health care providers.

Hispanics/Latinas

The Hispanic population in North Carolina is highly diverse. There is some evidence that Cuban American women and women from South and Central America have lower Pap smear compliance than Mexican American women. Language, cultural, and economic barriers to care necessitate targeted outreach to bring cancer education and screening to women from these communities. (Harlan, 1991).

Asian Americans and Pacific Islanders

Asian Americans and other ethnic subgroups are present in North Carolina in relatively small numbers. Research suggests that Asian Americans and Pacific Islanders are less likely to be screened for cervical cancer than are white and African American women.

Lesbians

Research suggests that lesbians are less likely than heterosexual women to receive regular screening for cervical cancer. This is true even among lesbians with a past or current history of heterosexual intercourse, multiple sexual partners, or sexually transmitted diseases. Reasons for this low screening rate include misinformation among lesbians and health care providers about lesbian health care needs and the false assumption that lesbians do not engage in behaviors that put them at risk for cervical cancer. Also, because Pap screening and other preventive care services are most often linked to reproductive health care, lesbians may less frequently receive these routine services. Lesbians should receive regular cervical cancer screening and bi-manual pelvic examinations. The frequency of screening should be based on an evaluation of each client's risk and specific medical history. (Rankow, 1995).

Strategies for Reaching Women who Under-Utilize Screening Services

- ☒ Increase public education about treatment success and early detection.
- ☒ Include high quality training for health care providers on eliciting a thorough health history, improving communication with clients, and obtaining an adequate cervical smear sample.
- ☒ Increase the use of special messages targeted to populations not receiving adequate screening.
- ☒ Make women health care providers available to clients.

CHAPTER

3

Cervical Cancer Screening

Cervical Cancer Screening

Screening for cervical dysplasia and cancer is carried out through routine Pap smear examination. The frequency of Pap smears for each woman is determined by the adequacy and results of previous Pap smears. Attention to proper technique is important to ensure reliable results. Likewise, attention to the barriers that prevent women from having regular Pap smears is important for the health care providers who serve women in North Carolina.

Screening Method and Guidelines

Pap Smears

Pap smear screening is a rapid method for detecting cervical dysplasia and in situ cancer, as well as invasive cancer. A Pap smear evaluates cells harvested from the ectocervix and endocervix for abnormal changes associated with the development of cervical cancer. The introduction of the Pap smear 50 years ago is largely responsible for the national decline in cervical cancer mortality.

Frequency of Pap Smear Screening

In 1988, a consensus recommendation was developed by the American College of Obstetricians and Gynecologists, the American Nurses Association, the American Cancer Society, the National Cancer Institute, the American Medical Association, the American Academy of Family Physicians, and the American Medical Women's Association. Recommendations include:

- All women who have been sexually active or who have reached 18 years of age should have an annual cervical smear (Pap) and pelvic examination.
- After a client has had three or more consecutive, satisfactory, normal annual examinations, the cervical smear may be performed less frequently at the discretion of her health care provider. The U.S. Preventive Services Task Force (1989) recommends that the time between smears be 1-3 years, depending on the presence of risk factors for cervical cancer. The risk of an abnormality occurring within 3 to 5 years after three consecutive negative annual smears is minimal in a low risk client.

Client Preparation

Before the Appointment

When an appointment is scheduled for a Pap smear, the client should be advised that the likelihood of getting a high quality Pap smear is increased by putting **nothing** in the vagina for 48 to 72 hours prior to the examination.

Client Preparation for a Pap Smear

- No intercourse or other penetrative sex
- No tampons
- No douching
- No vaginal medications or lubricants
- No vaginal contraceptive

The Client Education Page at the end of this handbook may be a helpful first step for providing information to clients who are scheduled for, or considering, a Pap smear.

Before the Examination

Knowing what will occur during the examination helps the client relax, reduces her anxiety, and make performing the examination easier. Helping the client keep warm and comfortable also helps her relax, easing the examination.

- ☒ Conduct the sexual history and as much of the education and other discussion as possible while the client is fully clothed. She is likely to be more open and comfortable in her discussion.
- ☒ Ask the client whether she has had a Pap smear before. Explain that the examination includes inspection of the external genitalia, vagina, and cervix, as well as performance of a Pap smear and a bi-manual examination. Make sure that the client understands the terminology.
- ☒ Show the speculum to the client. Explain how it works and the sounds it makes — the rattle of the metal speculum's knob, the clicks of the plastic speculum.

-  Explain that the examination should not be painful, although it may be uncomfortable.
-  Ask the client to let the health care provider know if she experiences pain; the technique may be altered or the problem may be something as simple as a hair caught in the speculum.
-  Encourage the client to ask questions at any time before, during, or after the examination. Many clients are unlikely to raise questions or concerns unless explicitly invited to do so by their health care provider.
-  Introduce any additional persons in the room. Explain their purpose for being there, and in the case of students, ask permission.
-  Be explicit about how much to disrobe. This will prevent the client from fully disrobing unnecessarily.
-  Draw curtains (especially if the table faces the door) and provide drapes to ensure modesty.
-  Cover metal footrests with cloth — socks or oven mitts may be used — to protect bare feet.
-  Provide a blanket if the client is cold and especially if she must wait for the health care provider at length.
-  Provide a pillow for lower back or head support.
-  Inquire if the client would be more comfortable sitting with the back of the table raised up slightly. With the table at a 33 degree angle, the health care provider and client will be able to see each other's faces without constricting the abdomen.

Pap Smear Collection

The most important step in cervical cancer detection is obtaining a quality Pap smear by utilizing correct collection techniques. Always label the slide with the client's name before the Pap smear is taken. Warm the speculum with either a heating pad or warm water. **Avoid the use of lubricants since they can inhibit the proper staining of cellular material on the slide.** Proceed at a relaxed pace and explain each step of the procedure to the client.

To ease insertion of the speculum, relax the vaginal muscles with a Kegel exercise. Ask the client to squeeze her vaginal muscles around the inserted finger and then to relax. Pull down on the perineum, enlarging the vaginal opening. Insert the speculum over the inserted finger. Insert the speculum at an oblique angle and apply downward pressure parallel with the floor (this keeps the speculum from pushing against the urethra). Maintain downward pressure on the speculum throughout the examination. After inspecting the cervix, and if necessary, gently and carefully use a large cotton applicator to remove excess mucous secretions from the cervical os, without disturbing the epithelium, prior to obtaining the smear.

When removing the speculum, return it to an oblique angle before it exits the vagina.

Effective collection and evaluation are not inseparable. Approximately two-thirds of "false negative" Pap smears of the cervix are due to sampling (i.e., collection) problems while one third is due to laboratory error.

Interacting with the Client During the Examination

- ☑ Explain each step before and during the examination (“I’ll be inserting the speculum now. You’ll feel some pressure.”).
- ☑ Each time contact is initiated, warn the client that she will be touched (“I’m going to touch you now.”). Touch in a neutral spot, such as the thigh, before proceeding to the genitals. This practice conveys respect and sensitivity and helps the client relax.
- ☑ Minimize touching, in general.
- ☑ Offer a mirror. The client can use it to follow the examination if the table is angled correctly.
- ☑ Make a “V” in the drape. This facilitates interaction between the client and health care provider during the examination and allows the health care provider to see facial expressions that may reveal symptoms not expressed verbally.
- ☑ Maintain frequent eye contact.
- ☑ Do not interact with an assistant or student *about* the client in front of her. Always include the client in any discussions about her examination.
- ☑ Avoid language that has painful, violent, or sexual connotations and medical terminology that might not be understood:
 - Speculum *bills*, rather than *blades*.
 - Tighten the knob* on the speculum, avoiding the word *screw*.
 - Examine*, rather than *feel* or *palpate*.
 - Insert* or *place*, rather than *stick in* or *put in*.
 - Remove* rather than *withdraw* or *pull out*.
 - Table*, not *bed*.
 - Footrests*, not *stirrups*.
 - Relax your legs open*, not *spread your legs*.
- ☑ Point out anatomy to the client and explain anatomical terms that may not be fully understood, such as cervix and urethra.
- ☑ After the examination, explain that there may be some spotting as a result of the Pap smear.

Obtaining the Pap Smear

It is most important that an adequate sample be taken from the squamocolumnar junction (the transformation zone), transferred to the cytology slide, and immediately fixed with a commercial fixative.

The location of the squamocolumnar junction can be identified by a change in color and texture between the squamous and columnar epithelia. The squamous epithelium appears pale pink, shiny, and smooth. The columnar epithelium appears reddish with a granular surface.

- ✓ Have the slide, endocervical brush, and spatula in hand. Collect the ectocervical sample before the endocervical sample. Wait to fix the slide until both specimens have been collected. Use a commercially prepared cytology fixative. Avoid the use of hair spray or other fixatives.
- ✓ If the squamocolumnar junction **cannot** be identified, place the elongated edge of the spatula into the cervical os; press firmly and rotate 90–360 degrees.
- ✓ If the squamocolumnar junction is identified on the ectocervix, obtain the sample utilizing the regular end of the spatula.
- ✓ Obtain the endocervical sample using the endocervical brush. Place the brush gently in the cervical os and rotate 90–360 degrees to ensure that all 360 degrees of the endocervical canal is sampled. This is particularly important if the health care provider finds an enlarged or gaping endocervical os.

Obtaining a Sample Using the Spatula and Endocervical Brush

Spatula



Endocervical Brush



Special Considerations

- For a client who has had a **hysterectomy**, use the regular tip of the spatula to scrape the area of the vaginal cuff.
- For a client who has a **lesion** on the vaginal wall, use a **separate spatula** to scrape the margins to secure cells. **Prepare a separate slide and laboratory form.** Describe the lesion and location.
- For a client who has **vaginal/cervical dryness**, moisten the cervical spatula with normal saline.
- For a client who is **pregnant**, use the regular tip of the spatula, the endocervical brush for endocervical collection, or a cotton tip applicator moistened in saline to collect the endocervical specimen. Do not force the brush into the os.
- Collect the Pap smear prior to other samples for wet mounts or testing for **sexually transmitted diseases**.
- For a client who is menstruating, if it is unrealistic for her to return at another time, clean the blood off the cervix using gauze or sponge forceps.

In the presence of frank bleeding, the Pap smear should not be obtained. A Pap smear obtained in this situation is not appropriate practice. Symptoms that may be due to neoplasia should be completely evaluated.

If the client has an active vaginal infection, the accuracy of the Pap smear may be significantly reduced.

An inadequate Pap smear should be repeated, particularly for a client who has previously had an abnormal Pap test.

Slide Preparation

When using one slide for Pap smear collection, transfer material to the slide as follows:

- ☑ Transfer the cellular material from the spatula down the length of the slide.
- ☑ Turn the spatula over to superimpose material in the same manner.
- ☑ Transfer the cellular material from the endocervical brush onto the same slide by rolling the endocervical brush from left to right.

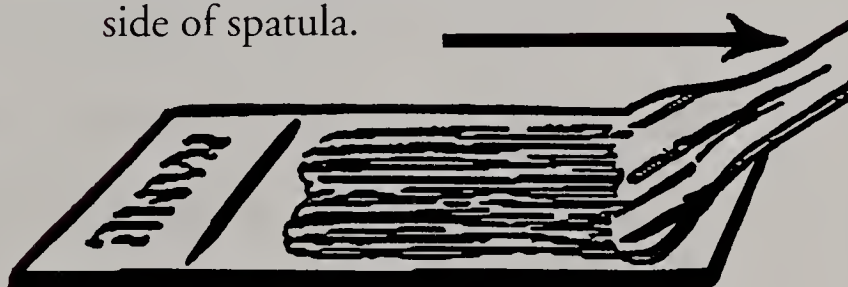
Avoid zigzagging motions with all samples.

Proper fixing is vital. Spray with fixative **immediately** since air-dried cells cannot be interpreted. Use commercially prepared cytology fixatives (hair spray is not a fixative and should not be used). Hold the spray container at least 10 inches away to ensure coating and to prevent dispersal and destruction of the cells by the propellant. **No more than 5–10 seconds** should elapse between smearing and spraying of the slide. When fixing the slide, leave the slide flat to avoid washing cells down one side. If fixative leaks off the slide while lying flat, too much fixative may have been used. **Protect the frosted end of the slide** with your thumb or paper while spraying (the preliminary lab number washes off during processing if fixative is applied to the frosted end of the slide).

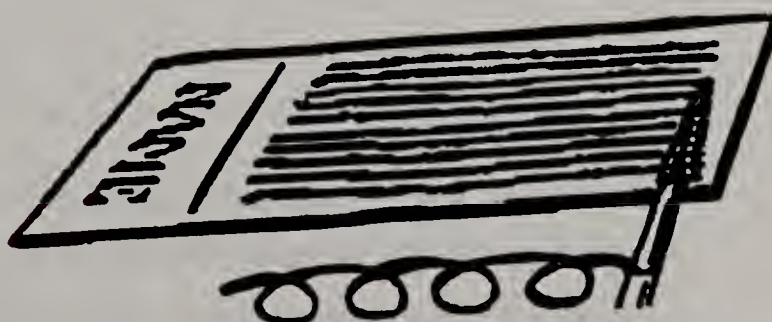
Air dry the slide completely before wrapping. Slides should be flat while drying. Place the slide in the center of the mailer.

The Two-Step Method for Spatula and Endocervical Brush

- 1 Spread material from each side of spatula.



- 2 On same slide, roll endocervical brush.



Reporting Systems and Terminology

The Bethesda System

Pathologists have classified the gradations of cervical cell changes in several ways over the years. Progressing along the gradations from normal cell growth to cancer, one common scheme starts with “normal” and goes on to “atypia,” “mild dysplasia,” “moderate dysplasia,” “severe dysplasia,” “carcinoma in situ,” and finally “invasive cancer.” Dysplasia does not always develop into cancer, but if left untreated, some women will develop cancer. Carcinoma-in-situ means there is some cancer growth but only on the surface of the cervix. Invasive cancer means that cancer cells are growing on the cervix deeper than the surface and may be invading other tissue.

The National Cancer Institute convened the first workshop on the Bethesda System in 1988 to clarify the confusion of multiple cytological reporting systems. The goals of the new system were to (1) provide better communication between the cytopathologists and the referring health care providers; and (2) facilitate cytologic and histologic correlation in cervical and vaginal samples. The classification that was developed is called The Bethesda System (TBS) for Reporting the Cervical/Vaginal Cytological Diagnoses. This system starts with a description of “within normal limits” or “infection,” moving through “atypia” to “low-grade SIL (squamous intraepithelial neoplasia),” “high-grade SIL,” and “squamous cancer.”

The Bethesda System of reporting introduces several features, including:

- An evaluation of specimen adequacy.
- The descriptive diagnosis of atypical squamous cells of undetermined significance (ASCUS).
- The inclusion of changes associated with Human Papilloma Virus (HPV) such as koilocytosis along with cervical intraepithelial neoplasia (CIN) within the category of low-grade squamous intraepithelial lesion (LGSIL).

The terms “low-grade squamous intraepithelial lesion” (LGSIL) and “high-grade squamous intraepithelial lesion” (HGSIL) are used to describe the categories of squamous cell precursors of cancer. These were previously categorized as dysplasia (with the degree described), carcinoma-in-situ (CIS), and cervical intraepithelial neoplasia (CIN).

Pap Smear Terminology Comparison Chart

Expected Histology	Bethesda System	State Laboratory of Public Health	CIN System
Unknown	Unsatisfactory (Reason Given)	Unsatisfactory (Reason Given)	Unsatisfactory
Normal	Within Normal Limits Benign Cellular Changes: Infection, Reactive Change	Benign Inflammatory Changes Reactive Inflammatory Changes	
Squamous Metaplasia			
Atypia Squamous Metaplasia	Atypia (ASCUS) (AGUS)	Significant Cellular Atypia Columnar Epithelial Atypia	
Mild Dysplasia	Low Grade SIL: HPV Mild Dysplasia	Mild Dysplasia Mild-Moderate Dysplasia Moderate Dysplasia	CIN1
Moderate Dysplasia	High Grade SIL: Moderate Dysplasia Severe Dysplasia CIS	Moderate-Severe Dysplasia Severe Dysplasia	CIN2
Severe Dysplasia			CIN3
Carcinoma In Situ (CIS)		CIS	CIN3
Invasive Cancer	Squamous Cell Carcinoma Adenocarcinoma	Squamous Cell or Adenocarcinoma	

Quality Control in the Laboratory

Effective Pap smear collection is extremely important for detecting cervical abnormalities and providing timely treatment. Effective collection includes:

- ☑ Appropriate timing in the menstrual cycle to collect a sample of cervical and endocervical cells (including the zone of transformation) without excessive debris.
- ☑ The proper application and fixation of that sample to a slide.
- ☑ The proper (including labeling) and timely submission of the slide to a qualified laboratory.

Effective evaluation is dependent upon the adequacy of information about client history as well as current information (e.g., last menstrual period, hormonal therapy) provided with the smear(s). In addition, accurate reading (as measured by false positive and false negative rates) of adequately collected smears and the timely reporting of clearly written results to the submitting health care provider are important.

Cytotechnology Laboratory Quality Assurance

Laboratory Effectiveness

Accurate statistics about quality of cytology laboratories in North Carolina are not available. Laboratories in the state have, however, informally reported “false negative” rates from 10% to 25%. These rates correlate well with those reported in the medical literature at a national level. Laboratory-associated “false negatives” most frequently occur with low grade lesions.

In a large study, the quality of 74% of smears were considered “satisfactory,” 25% “satisfactory with limitations” that often required repeating, and 1% “unsatisfactory” that definitely required repeating (Curtis, 1993).

Current Regulations for Laboratory Quality Assurance

The final regulations for the Clinical Laboratory Improvement Act of 1988 (CLIA 1988) were published in the Federal Register on February 28, 1992. It is anticipated that these regulations, once finalized, will increase the work load of cytology laboratories largely through increased

requirements for quality assurance and record maintenance. It is too early to determine whether the new quality assurance and regulatory measures will have an impact, either negative or positive.

Cytotechnologists in North Carolina

North Carolina cannot meet the current demand for Pap smear reading. The estimated 115 cytotechnologists in North Carolina who read gynecologic smears have the capacity to read only about 1.1 million a year. As of 1990, 2.6 million women ages 18 and over resided in North Carolina. At least half, or 1.3 million women in the state, receive Pap smears in a year. In addition, there are approximately 93,000 repeat Pap smears due to the poor quality of original samples.

Recommendations

To Improve Sample Quality

- ☒ Encourage private laboratories to provide regular feedback on the quality of Pap smears submitted by health care providers.
- ☒ Establish a method of monitoring the quality of smears from individual health care providers. Evaluate its effectiveness.
- ☒ Estimate the rate of suboptimal or unsatisfactory Pap smears and the frequency with which health care providers recommend that clients return for a second Pap smear. Estimate the frequency with which those clients actually return for repeat screening.
- ☒ Conduct continuing education seminars for health care providers to improve the quality of Pap smears.
- ☒ Establish an active surveillance system to detect and investigate sentinel cases of invasive cervical cancer. This would include a review of previous negative Pap smears from such clients, thereby assisting in accurately estimating the rate of false negatives.

To Improve Sample Quality and Reading

Providers should adopt automated preparation and reading techniques as soon as they are approved by the Food and Drug Administration (FDA).

Office Laboratory Practices

Chemical Disinfection

For facilities without autoclaves, chemical disinfection is the most practical alternative for decontaminating infectious waste. A variety of commercial disinfectants is available. They should be used according to the manufacturer's directions.

- ☒ Culture plates or agar slants: place the media container in a plastic bag or other plastic container that can be sealed.
- ☒ Double-bagging may be necessary in the event of leaking.
- ☒ Broth cultures: add approximately equal volumes; cap or place in a plastic bag or other plastic container that can be sealed.
- ☒ Disposable items in contact with blood, serum, or other body fluids: rinse with disinfectant and discard.
- ☒ Reusable items in contact with blood, serum, or other body fluids: soak in disinfectant. Metal items may be left in disinfectant at least 30 minutes. Nonmetal items may be left overnight. Wash, clean, and sterilize as appropriate.
- ☒ Work surfaces: clean with disinfectant at least daily. If contaminated by biologic or infectious material, apply disinfectant, let stand 15 minutes, wipe up, and reclean surface with another application of disinfectant and clean cloth.

Once decontaminated, culture plates, tubes, and other wastes may be removed from the laboratory for disposal by usual means.

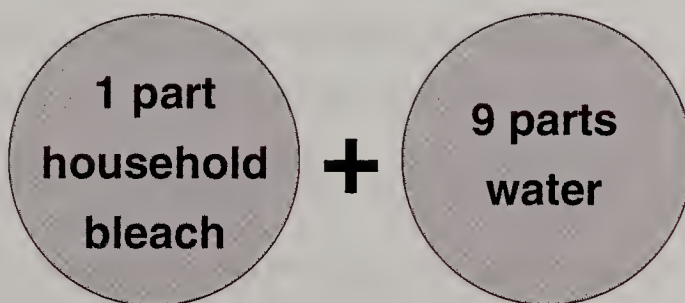
Do not soak metal specula in bleach solution, as they will corrode. They may be rinsed in the bleach solution, if followed **immediately** with soaking or washing in soapy water and rinsing. If a sterilizer or autoclave is not available, boil specula for at least 5 minutes. Remove and store in a clean drawer or covered container. It is **strongly suggested** that facilities that do not have an autoclave purchase one or use disposable specula.

Incineration

Contaminated waste should be burned only in an incinerator approved by the Environmental Protection Agency (EPA). Incomplete combustion in an unacceptable incinerator may leave infectious material, exposing the operator to risk.

Preparation of Bleach Disinfectant

Diluted 5.25% sodium hypochlorite (household bleach such as Clorox®, Purex®, or store-brand) is one of the best chemical disinfectants. It is effective against bacteria, spores, and viruses. It is inexpensive and easily obtained at the supermarket or drugstore. Prepare 1:10 dilution in the following proportions.



1 liter 100 ml. bleach + 900 ml. water
(equivalent to about 1 quart)

1 gallon 1 cup bleach + 3 quarts & 1½ pints water
(equivalent to about 4 liters)

Diluted solutions should be prepared daily.

Barriers to Screening: The Health Care Provider's Perspective

Information on perceptions of barriers to cervical screening is drawn from the 1991 North Carolina Survey of Physician Health Services. This survey was cosponsored by the North Carolina Medical Society; the Old North State Medical Society; and the North Carolina Division of Adult Health of the Department of Environment, Health, and Natural Resources. Funded by the Centers for Disease Control and Prevention, data were obtained from a random sample of primary care physicians in North Carolina through a mail-out survey. In order to obtain information on perceived barriers to cervical screening, respondents were asked, "What are the three most important barriers to appropriate screening for cervical cancer?" The respondents were asked to select three from a list of potential barriers. Responses of the 556 physicians who completed the survey are presented in the box on the following page.

The physicians' responses reflect strong agreement with client reports concerning the unpleasant aspects of the Pap smear procedure itself and absence of money for the test. However, physicians place somewhat more emphasis on the health care providers' failures to remind clients to be screened as an important barrier to appropriate screening.

The large percentage of physicians reporting the client's lack of knowledge of cervical screening and risk factors as an important barrier to cervical screening is consistent with the reports of many women who:

- Feel it is not important to be screened if asymptomatic.
- Do not know the purpose of the Pap smear.
- Believe they are not at risk for various reasons, such as no family history of cervical cancer.

Recommended Screening Practices

Screening for cervical cancer requires initiative on the part of the health care provider. One important barrier to cervical screening for high risk clients may be the health care provider's perception that certain subgroups of women do not need to be screened at regular intervals. Information on the recommended screening practices of primary care physicians in North Carolina was obtained from the previously described 1991 North Carolina Survey of Physician Health Services (NCSPHS survey) and a 1988 survey of primary care physicians' cervical screening practices conducted by the Bowman Gray School of Medicine (Herman, Lengerich, & Stoodt, 1995). The latter study was a mail-out survey of a random sample of family medicine, obstetrics and gynecology, internal medicine, and general practitioners in North Carolina. Results are described in the chart on the next page.

Barriers to Cervical Cancer Screening	
Percent of Physicians who Mentioned Each Barrier:	
Predisposing Factors (Client)	
Having a pelvic examination is unpleasant, embarrassing, or painful	69.1%
There is a lack of understanding by many women of cervical cancer screening and risk factors	59.7%
Most women are afraid of being told they have cancer	19.2%
Enabling Factors (Client)	
Some women do not have the money to get a Pap smear	41.6%
Some women feel they are too busy to get a Pap smear	29.5%
Many women have a problem getting to the physician's office	3.0%
Reinforcing Factors (Client)	
Physicians and/or nurses are not reminding women to get a Pap smear	28.5%
Predisposing Factors (Physician)	
Many physicians are too busy with sick clients to emphasize preventive services	19.2%
Source: Herman, Lengerich, & Stoodt, 1995.	

Percentage of Physicians who Recommended Pap Smear Screening for a Typical Adult Client

	All Physicians	Family Practice	OB/GYN	Internal Medicine	General Practice
At least once a year	81.8	80.1	95.7	69.9	75.0
Every other year	8.2	10.5	0.7	12.4	11.5
Every third year	1.9	1.8	-	4.4	1.9
Other	8.2	7.6	3.6	13.3	11.5
<i>Number Surveyed</i>	<i>477</i>	<i>171</i>	<i>138</i>	<i>113</i>	<i>52</i>

Percentage of Physicians who Do Not Recommend Pap Smears for Specific Subgroups of Women

	All Physicians	Family Practice	OB/GYN	Internal Medicine	General Practice
Sexually active teens	2.9	1.8	-	6.5	7.7
Non-sexually active teenagers	50.9	56.1	33.3	63.2	65.4
Women with a hysterectomy	17.8	11.3	2.2	33.0	32.0
Women who have reached menopause	0.4	-	-	0.9	2.0
Women ages 65-74	1.0	-	-	2.7	3.8
Women 75 or older	8.0	10.7	0.7	13.4	15.4
<i>Number Surveyed</i>	<i>477</i>	<i>171</i>	<i>138</i>	<i>113</i>	<i>52</i>

Source: Michielutte, 1993.

Barriers to Screening: The Client's Perspective

Barriers to cervical cancer screening operate in different combinations for many women. Certain factors, however, have been identified consistently. Under-screening for cervical cancer is associated with poverty or near poverty, little formal education, and lack of regular medical care and health insurance. Furthermore, not all women know about cervical cancer, its detection, or its treatment. The barriers women most commonly report are that they:

- Find it difficult to talk about matters dealing with the reproductive system, and therefore, will not consult health care providers about cervical cancer screening.
- Have to wait too long before the health care provider sees them.
- Are embarrassed to have a gynecological examination.
- Find the test unpleasant and uncomfortable.
- Do not like to be examined by male health care providers.
- Believe they are not susceptible to cancer.
- Fear the test results will be positive.
- Believe cancer cannot be cured.
- Have no personal health care provider or regular health care.
- Can only afford to go to a health care provider when sick.

Availability, Accessibility, and Affordability of Screening

Many women at highest risk of cervical cancer do not have a source of private health care. Some of these women use the public health sector, while others do not access any services — private or public. Until recently, public sector cervical cancer screening in many North Carolina counties had been largely limited to family planning services. Although screening in many counties is available to women beyond the child bearing age, it has sometimes been offered only through a sexually transmitted diseases clinic. This carries a stigma for many women.

Since 1992, the Centers for Disease Control and Prevention (CDC) has provided federal funding for North Carolina's Comprehensive Breast and Cervical Cancer Control Program (BCCCP). All 100 counties in North Carolina and the Cherokee Nation Health Delivery System provide free or reduced cost screening for cervical cancer for income eligible women. The BCCCP provided cervical screening services to over 20,000 women during the January 1993–1995 period. Unfortunately, available funding will serve only a small portion of the eligible North Carolina women.

Health departments in 92 counties that responded to a survey indicated that they offer some cervical screening. However, the number of clinics that offer cervical screening, the number and ages of clients they are able to serve, and the frequency with which these screenings are held vary considerably. Moreover, Pap smear screening is less available in certain geographic areas, particularly rural areas of North Carolina.

The results of various surveys show that between 20% and 60% of women felt they could only afford to seek health care when sick, not for a screening test. Women who live in poverty or near poverty cannot afford and/or do not avail themselves of Pap smear screening or follow up treatment.

Summary of Barriers to Cervical Cancer Screening

The information available about barriers to cervical screening suggests that no simple answer will emerge to explain why some women are not appropriately screened. A large number of barriers have been identified. Combinations of different barriers will operate for every woman. However, certain factors have been consistently identified regardless of the data source or the data collection.

Income Under-screening for cervical cancer is associated with a life characterized by low income, low formal education, lack of regular medical care, and lack of health insurance (i.e., poverty or near poverty).

Age Older women are an under-screened group, and this appears to operate somewhat independently of formal education, income, and other markers of low socioeconomic status.

Perceptions and Beliefs Embarrassment, pain, and discomfort associated with the pelvic examination and the Pap smear are consistently identified among the most important barriers to cervical screening. Other significant barriers include: fear of finding cancer, dislike of the long waiting period before being seen by a health care provider, dislike of being examined by a male health care provider, general lack of understanding of the Pap smear, a belief that being asymptomatic means no test is necessary, and a belief that cancer cannot be cured regardless of how early it is detected.

Resources Lack of money for preventive care is by far the most important enabling barrier. Lack of time and transportation are also important. Lack of time is especially important for women employed outside the home.

CHAPTER

4

Diagnosis and Referral

Diagnosis and Referral

Each health care provider and facility should utilize a tracking protocol that assures effective communication among the client, health care provider, and laboratory personnel. Such a protocol, along with measures to address barriers that clients might have to following recommendations, will facilitate proper follow up for clients with abnormal or unsatisfactory Pap smear results.

Tracking Systems

Impacts on Appropriate Follow Up Care

Tracking is the act of effectively following a client to assure that care appropriate to her needs is provided. The focal unit in a tracking system is an individual. Tracking is appropriate for individuals with identified disease and precursors to disease and to other individuals for whom rescreening is recommended. The mechanism for following many individuals in an organized manner is a **tracking system**.

The interdependence of the health care provider, clinic, laboratory, and client is readily apparent. An ideal tracking system takes into account the interdependence of these three entities. In addition to organizing information, the system must also ensure processes for communication among these entities. Communication includes not only sending but also receiving and understanding relevant information and is therefore critical to the success of screening efforts.

Paper Versus Computerized Electronic Data Base

For many years, handwritten tickler files and logs have been used for tracking. More recently, these paper systems have been replaced or supplemented by electronic systems. The information in these electronic systems ranges from a very small amount (e.g.: a tickler card file) to extensive data (e.g.: lifetime medical records). With telecommunications technology, timely communication among appropriate parties is possible, data analysis is simplified, and communication with clients is prepared and documented more readily.

The electronic systems surpass the paper systems in their potential usefulness; timeliness; flexibility; and in most cases, acceptability. However, for many users, particularly in small clinics or practices, paper systems are still simpler and less costly.

In summary, the more effective the communication among client, health care provider, and laboratory, the more effective the tracking system in assuring that clients receive the care needed to prevent cervical cancer and its consequences. The more closely the population captured in the tracking system approximates the population in need of screening, the better the system can serve to assure that no women in the jurisdiction are “slipping through the cracks.”

For further information about tracking systems, the following sources are recommended:

Frame, P.S., Zimmer, J.G., Werth, P.L., Hall, W.J., & Eberly, S.W. (1994). Computer-based Versus Manual Health Maintenance Tracking. *Archives of Family Medicine*, 3, 581-587.

McPhee, S. J., & Detmer, W.M. (1993). Office-Based Interventions to Improve Delivery of Cancer Prevention Services by Primary Care Physicians. *Cancer*, 72, 1100-1112.

Tape, T.G., & Campbell, J.R. (1993). Computerized Medical Records and Preventive Health Care: Success Depends on Many Factors. *American Journal of Medicine*, 94, 619-625.

Barriers To Follow Up

Clients with abnormal screening results, particularly those suggestive of cancer or the presence of Human Papilloma Virus (HPV), are at increased risk for developing invasive cervical cancer. They need to be evaluated and treated with appropriate follow up care. Approximately 60% of clients with abnormal Pap smears carry through on their health care providers' recommendations for follow up and treatment (Koss, 1989).

In health care settings that made no special efforts to increase return rates for recommended follow up care and treatment, clients returned at rates ranging from 20–74% (Lane, 1983). Studies of interventions with aggressive and costly follow up techniques have achieved rates ranging from 33–95% (Frisch, 1986).

Beliefs

Studies of client follow up with recommendations for treatment after an abnormal Pap smear do not explain why women do not obtain repeat testing after an abnormal smear. The aim of a study by Paskett et al. (1990) was to understand why women with abnormal Pap smears fail to follow through on recommendations for a repeat Pap smear. A hierarchical weighted utility model was used to identify issues women identified as important in their decisions concerning a repeat Pap smear after an abnormal Pap smear. Issues and beliefs found to significantly effect follow through included:

- Health care provider's opinion
- Perceived accuracy or seriousness of the result
- Perceived value of early detection
- Familiarity with the procedure
- Time pressures
- Perceived risk of cancer
- Fear of cancer

Recommendations

The following strategies may improve client follow through on health care provider recommendations after an abnormal Pap smear.

- ☒ Health care providers should utilize a tracking system, computerized or on paper, that identifies and follows up results of abnormal Pap smears and client follow through. This system allows health care providers to ascertain follow through rates and to locate clients in need of reminders.
- ☒ Efforts should be targeted at two levels. First, information should be offered to clients with abnormal results to address their concerns about test results. Second, facilitating conditions, such as cost, transportation, access to colposcopy services, and clinic friendliness should be considered.
- ☒ Interventions should be “stepped” so as to increase cost to health care providers and intensity only with the more recalcitrant clients. Educational materials should be sent to all clients upon notification of an abnormality. Clients who do not return for screening might then receive a phone call from clinic personnel. Those clients who are still not screened might then receive certified letters and/or visits from public health personnel. This strategy endeavors to encourage the easiest clients with simple, inexpensive, and practical efforts.

Referral to a Dysplasia Clinic

A dysplasia clinic provides outpatient services for the evaluation of the abnormal Pap smear through colposcopy and the treatment of local cervical lesions through cryosurgery, laser conization, electrocautery, or LEEP.

The Cancer Control Program of the Division of Adult Health Promotion assists financially eligible women who do not have third party reimbursement (i.e., health insurance and/or Medicaid).

Updated service provider listings can be obtained from the Cancer Information Service at 1-800-422-6237. These listings include not only dysplasia clinics but also local health departments, university facilities, and oncology centers.

Dysplasia Clinics

Chapel Hill

Department of OB/GYN
UNC School of Medicine
(919) 966-5281

Charlotte

Department of OB/GYN
Carolinas Medical Center
(704) 355-3205

Durham

Duke University
Medical Center
(919) 684-6327

Fayetteville

Fayetteville AHEC
(910) 323-1152

Greenville

ECU School of Medicine
(919) 816-2173

Sylva

Sylva Women's Clinic
(704) 816-4620

Winston-Salem

Bowman Gray School
of Medicine
(910) 716-6009

Client Education

The client should be provided with instructions along with counseling when the appointment is made for the dysplasia clinic. The following points should be stressed prior to the appointment:

- ☒ The client should not douch, use intravaginal medications, vaginal contraceptives, tampons, or lubricants; or have intercourse or other penetrative sexual activity for at least 48 to 72 hours prior to the appointment.
- ☒ When the client is scheduling the appointment, she should select a day not likely to coincide with her period.
- ☒ If necessary, the clinic may be able to arrange transportation.

CHAPTER

5

Resources for Information and Referral

Resources for Information and Referral

There are many cervical cancer resources available to health care providers in North Carolina and the clients they serve. Refer to the organizations listed here to obtain educational services and materials for individuals concerned about cervical cancer detection and treatment and to locate the latest technical information available to health care providers.

General Information

Health care providers may want more general information for themselves, their clients, and their clients' families. The services listed below will help them obtain what they need. Additional information is available from local libraries, bookstores, and support groups.

Cancer Information Service (CIS)



1-800-4-CANCER (1-800-422-6237)

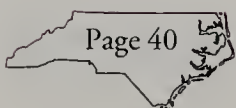
The CIS, a program of the National Cancer Institute (NCI), provides a nationwide telephone service for people with cancer, their families, the public, and health care providers. The staff can answer questions and can provide booklets about cancer. The CIS also maintains an updated list of providers of low cost cervical cancer screening and referral resources for each county. They also may know about other local resources and services. One toll-free number connects callers with the office that serves their area. Spanish speaking staff members are available.

American Cancer Society (ACS)



(919) 834-8463 Raleigh, North Carolina

The ACS is a voluntary organization with a national office and local units all over the country. In North Carolina, the ACS has field staff in counties throughout the state. The ACS supports research, conducts educational programs, and offers many services to women and their families. To obtain information about local services and activities and for referral to ACS field staff serving each county, call the ACS's North Carolina office at the number above or contact your local ACS office.



CancerFax

(301) 402-5874

The National Cancer Institute's CancerFax service provides current cancer treatment information including treatment information summaries and supportive care information summaries from the Physician Data Query (see below). By calling the phone number above, users can have information in Spanish or English sent directly to a facsimile machine.

Physician Data Query (PDQ)

People who have cancer, their families, and their health care providers need current and accurate information about cancer treatment. To meet these needs, The National Cancer Institute (NCI) developed PDQ. This computer database provides quick and easy access to: current treatment information, screening guidelines, a list of approved screening facilities, information about clinical trials that are open to women and that test new and promising cancer treatments, and names of organizations and providers involved in caring for people with cancer.

To access PDQ, health care providers may use an office computer or the services of a medical library. The CIS (1-800-422-6237) can provide information about using the PDQ system. Information specialists at the CIS use a variety of sources, including PDQ, to answer questions about cancer prevention, diagnosis, and treatment.

For additional written resources about cancer; information about site-specific cancers, their treatment, and possible side effects; and nutritional information and recipes for people with cancer, call the CIS.

Send a written request to:

Office of Cancer Communications
National Cancer Institute
Building 31, Room 10A24
Bethesda, Maryland 20892

North Carolina Comprehensive Breast and Cervical Cancer Control Program (BCCCP)

BCCCP endeavors to increase screening, early detection, and follow up care among low income, high risk women (particularly women of color and older women). The program provides evaluation and follow up and promotes increased public knowledge and awareness about breast and cervical cancer.

All 100 counties in North Carolina and the Cherokee Nation Health Delivery System provide free or reduced cost screening for cervical cancer for income eligible women. The BCCCP provided cervical screening services to over 20,000 women during the January 1993–1995 period. Unfortunately, available funding will serve only a small portion of the eligible North Carolina women.

For a referral to a local BCCCP representative, call the Cancer Information Service at 1-800-4-CANCER (1-800-422-6237).

North Carolina Cancer Control Program (CCP)



(919) 715-3757 or (800) 662-7030 Raleigh, North Carolina

The CCP provides financial assistance for medical care of eligible persons requiring diagnostic and treatment services. To be eligible, a person must:

- Be a resident of North Carolina.
- Have symptoms or conditions suspicious of cancer, or be diagnosed as having cancer.
- Have an estimated 25% chance or better of a 5 year survival rate once a cancer has been diagnosed.
- Be ineligible for other medical assistance programs (e.g.: Medicaid) and have limited or no health insurance. *Charges for medical expenses reimbursed by the CCP may be used to meet the Medicaid Program's "spend down" for the individual.*
- Meet the financial eligibility requirements.

For further information, contact the CCP at either of the numbers above.

Professional Education

The following organizations are available for health care providers in search of professional education materials, practice guidelines and recommendations, and educational resources for clients with special needs.

Organization	Phone Number
American Academy of Family Physicians	(816) 333-9700
American Association of Retired Persons	(703) 550-9708
American Cancer Society	(800) 227-2345
American College of Obstetricians and Gynecologists	(202) 638-5577
American College of Physicians	(215) 351-2400
American College of Radiology	(703) 648-8900
American College of Surgeons	(312) 664-4050
American Indian Health Care Association	(303) 783-9337
American Medical Association	(312) 464-5000
American Medical Women's Association	(703) 838-0500
American Nurses Association	(202) 554-4444
American Society of Radiologic Technologists	(800) 444-2778
Cancer Information Service	(800) 422-6237
Coalition of Hispanic Health and Human Service Organizations	(202) 387-5000
Food and Drug Administration	(800) 838-7715
National Black Nurse's Association	(202) 393-6870
National Black Women's Health Project	(404) 758-9590
National Health Information Center	(800) 336-4797
National Medical Association	(202) 347-1895
Native American Women's Health Education Resource Center	(605) 487-7072
North Carolina Society of Radiologic Technologists	(919) 779-5539
Office of Minority Health Resource Center	(800) 444-6472

Client Education Page

The following page may be photocopied and used as client education material. It describes client preparation for a Pap examination and answers a few basic questions about cervical cancer and Pap smears. It may be appropriate for clients considering an examination or scheduled or referred for an examination.

Space is provided for health care providers to include contact information for themselves and their practices.

What is a Pap test?

It is a test that is used to find cancer of the cervix. If it is found early, it can be treated. The test is simple. The health care provider will wipe a brush on the cervix inside the vagina. This takes only a few seconds. Material taken from the cervix is then examined under a microscope to see if there is cancer or early pre-cancer changes.

Who needs a Pap test?

All women over 18 years old need a Pap test each year. Women under 18 years old who have had sex also need a Pap test each year. There is no upper age limit. Older women who have gone through the change of life (menopause), women who have had a hysterectomy, and women who are not sexually active still need regular Pap tests.

How do I get a Pap test?

You can contact your health care provider to schedule a Pap test. Or you can call the Cancer Information Service for help in finding someone who can perform a Pap test. Their number is 1-800-4-CANCER (800-422-6237).

You should schedule the Pap test before or after your period (not during your period). If you are not having periods, the exam can be done any time. During the 3 days before the test:

- ☒ Don't douche or put anything inside your vagina (including medications, tampons, or contraceptives).
- ☒ Don't have intercourse or other penetrative sex.

Did You Know?

A Pap test can find cervical cancer early. If it's found early, it's easier to cure.



Cancer of the cervix may have no noticeable symptoms. Only a Pap test can find it early.



If you are over 18, or if you are younger than 18 and have had sex, you need a Pap test each year.

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